Introduction to "Long- and Short term Dynamics of Pan-Japan Sea Area : Construction of Monitoring Network and Assessment of Human Effects" in the 21st-Century COE Program at Kanazawa University

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The 21st Century COE (Center of Excellence) Program "Environmental Monitoring and Prediction of Long- and Short-Term Dynamics of Pan-Japan Sea Area: Construction of Monitoring Network and Assessment of Human Effects" has started from 2002 supported by the Ministry of Education, Culture, Sports, Science and Technology of Japan.

The Sea of Japan is a marginal sea surrounded by the Japanese Islands, Korean Peninsula and Eurasian Continent, and it is rich in natural resources such as aquatic resources. However, this area is a zone of frequent earthquake and volcanic activity, because the Sea of Japan is located between the continent and an ocean trench. Moreover, the Japan Sea is vulnerable to tanker accidents, chemical factory effluents and radioactive contamination etc., because it is closed with narrow channels at both ends. In the meantime, Japan and the countries that are located on the opposite shore of the Japan Sea (Russia, China, Korea and North Korea) have large populations and are rapidly developing their industries and economies with remarkable innovations.

The activities of these countries require the consumption of large amounts of fossil fuel, and result in the release of carbon dioxide, acidic products and combustion particulates. These pollutants, when combined with the natural materials such as yellow sands, etc., can have a large effect on the environmental at global scale. Therefore, the Pan-Japan Sea is one of the most attractive areas for environmental scientists in the world, because it is good place to do researches. To prevent the disaster and to ensure that the Pan-Japan Sea area remains prosperous and safe, prediction of long- and short-term fluctuation in the environment and development and maintenance and accident prevention countermeasures based on the prediction are very important.

In this program, the Division of Global Environmental Science and Engineering, Graduate School of Natural Science and Technology, Kanazawa University is positioned as a center of excellence (COE) in Japan for the above research and education with foreign universities and research institutes.

The goals of the research and education on the development of highly sensitive environmental monitoring methods for the Pan-Japan Sea area are to construct data information networks, to predict environmental variations based on the monitoring, to maintain useful resources and to use them efficiently, and to prevent accidents that could damage the environment.